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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,569	12/21/2001	Hyung-Jo Kim	SI-0014	3724
34610	7590	09/08/2005	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			SONI, DEEPAK H	
			ART UNIT	PAPER NUMBER
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DATE MAILED: 09/08/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/024,569	Applicant(s) KIM, HYUNG-JO	
	Examiner Deepak Soni	Art Unit 2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,12 and 14-17 is/are rejected.
- 7) ☒ Claim(s) 2,3 and 5-11,13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/08/2002</u> | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Drawings

1. Figure 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 1) Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Valentine et al. (U.S. 6,487,209) in view of Allen "Megaco and MGCP".

Claim 1 "A call relaying method, comprising: communication messages using at least one of a Bearer Independent Call Control (BICC) protocol, a Media Gateway Control Protocol (MGCP), and a 3rd Generation-Inter-Operability Specification (3G-1OS) protocol to induce an external tone gateway to generate a tone; and relaying a call between an originating gateway controller

and a terminating gateway controller using the tone and a modified BICC protocol.”

Valentine et al. teaches the method of claim 1. Valentine et al. also teaches the system of the present invention comprises a GW 250 coupled between the IP network 270 and an Internet Protocol based Network 254, the GW 250 having therein a DMGP for directing the generation of a tone into the IP network 254 and for evaluating signal sending success. Thus, from FIG 2, it can be seen that the present invention can be used to route a tone originating from a mobile station through an IP based network backbone, and then send the tone to, for example, a PSTN, and IP, or another MS. As spoken of in column 3 lines 62-67 and column 4 lines 1-4.

Valentine et al. fails to teach a call relaying method using Media Gateway Control Protocol (MGCP) to induce an external tone gateway. However, “Megaco and MGCP” Allen, teaches the relationship between Media Gateway (MG) and Media Gateway Controller (MGC). At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to provision tone function of Valentine et al. and “Megaco and MGCP” of Allen. For example, MGCP typically conditions the endpoint to look for an off-hook indication (when a person lifts the receiver to make a call). When the MG detects the off hook, it tells the MGC, which might respond with a command to instruct the MG to put dial tone on the line and listen for DTMF tones indicating the dialed number. After detecting the number, the MGC

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determines how to route the call and using the inter-MGC signaling protocol such as H.323, SIP, or Q.BICC, contacts the terminating MGC. (See Paragraph 6, lines 1-7).

- 2) Claim 4 is rejected under 35 U.S.C 103(a) as being unpatentable over Vuong. (U.S. 6,765,912) in view of Valentine et al. (U.S. 6,487,209), Claim 4, "A call relaying method, comprising: requesting and confirming, with an originating gateway controller, a first resource assignment made by an originating wireless gateway for a core network connection; searching for a terminating wireless gateway in accordance with a call connection request communicated from the originating gateway controller to a terminating gateway controller; connecting the terminating gateway controller to a core network; connecting a tone gateway to the core network using the terminating gateway controller and generating a tone and transmitting the tone to a caller, with the tone gateway." Regarding claim 4, Vuong teaches the method of claim 4. Vuong also teaches the communications systems 10 includes gateway systems 14 and 16 (e.g., media gateways) connected to the packet-based network 12. The gateway systems 14 and 16 are interconnected to respective networks 32 and 34, which in one embodiment are circuit-switched networks. The gateway systems 14 and 16 thus provide for interworking between circuit-switched networks and the packet-based network 12. (See column 3 lines 62-67 and column 4 lines 1-2) Vuong fails to teach generating a tone and transmitting the tone to a caller, with the tone gateway. Valentine et al. teaches the

DMSCP 232 processes the start DTMF into a device control message, which is then transported to a LAM called a DTMF Media Gateway Processor (DMGP) 242 (the DMGP 242 is stored and executed in the GW 240) in step 314. (See column 4 lines 13-17) Thus, at the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to implement and interconnect to respective gateways. The motivation for use of the Tone Gateway (DTMF) as taught by Valentine et al. in the GSM IP based network being that if voice data is being carried through an IP network, the circuit-switched devices in the MSC are no longer operable. Therefore, the MSC cannot directly insert DTMF tones on the request from the MS. Therefore, there does not exist a reliable system or method of transferring a DTMF tone through an IP based GSM network. Therefore, there exists the need for a system and method of sending DTMF tones reliably through a GSM based telecommunication network that uses an IP network as a backbone. (See column 1 lines 44-52)

- 3) Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted -- Prior Art-- in view of Valentine et al. (U.S. 6,487,209). Claim 12, "A call relaying system, comprising: an originating wireless gateway that conducts modifications to a first resource assignment of an originating side, according to a first resource assignment modification instruction, and transmits information on a modified core network connection; a terminating wireless gateway that conducts a second resource assignment of a

terminating side, according to a second resource assignment instruction, and transmits information on an assigned core network connection; a tone gateway that transmits information on the assigned core network connection, according to the second resource assignment instruction, and provides a tone according to a tone provision instruction; a terminating gateway controller that communicates with the tone gateway and the terminating wireless gateway; and an originating gateway controller that communicates with the terminating gateway controller and the originating wireless gateway."

Regarding claim 12, Admitted --Prior Art-- teaches the method of claim 12.

Admitted --Prior Art-- teaches originating and terminating wireless gateway resource assignment, and terminating and originating gateway controller that communicates with terminating wireless gateway and originating wireless gateway. Admitted --Prior Art-- fails to teach the tone gateway communication.

Valentine et al. teaches the tone sending in a IP based GSM network utilizes the steps of receiving a DTAP command from a GSM MS, converting the DTAP command at the MSC into a device control message to the gateway, and selecting a tone generator method compatible with the interworking IP network. (See column 2 lines 29-34) Thus, at the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to modify messages flow changes between gateways to introduce tone gateway as taught by Kim in the next generation communication network.

- 4) Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over admitted -- Prior Art—by applicant in view of Valentine et al. (U.S. 6,487,209) and RFC.

Regarding claim 14, admitted --Prior Art-- teaches "wherein a protocol stack between the originating and terminating gateway controllers" admitted Prior Art fails to teach "and the tone gateway " Valentine et al. teaches tone gateway in Figure 4, Valentine et al. fails to teach MGCP, IP, TCP and ATM protocols, RFC 2705 teaches "contains a Media Gateway Control Protocol (MGCP)" RFC 791 teaches "an Internet Protocol (IP)," RFC 793 teaches "and a Transfer Control Protocol (TCP)" RFC 2383 teaches "or an Asynchronous Transfer Mode (ATM)". Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the tone gateway to relay call as taught by the background of Valentine et al. can be implemented in Next generation mobile communication network. The motivation for using the Tone Gateway as implemented by Valentine et al. in the GSM communication network since the voice data is carried through an IP network, the circuit switched devices in the MSC are no longer operable. Therefore, the MSC cannot directly insert DTMF tones on request from the MS. Therefore, there does not exist a reliable system or method of transferring a DTMF tone through an IP based GSM network. Therefore, there exists the need for a system and method of sending DTMF tones

reliably through GSM based telecommunications network that uses an IP network as a backbone.

- 5) Claim **15** is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant admitted -- Prior Art-- in view of Valentine et al. (U.S. 6,487,209). Regarding claim **15**, claim 15 is rejected "wherein the originating and terminating gateway controllers, the originating and terminating wireless gateways, and the tone gateway are connected with one another via a core network, using the IP." Valentine et al. teaches, Figure 4 provides a block flow diagram illustrating the steps for communicating a DTMF tone from a mobile station in a GSM network having an IP backbone to an IP based network (See column 2 lines 64-67). Thus, at the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references the IP backbone taught by Kim in the GSM network of Valentine et al. The IP backbone can be used to implement tone gateway functions. The motivation for use IP Backbone network as disclosed by Valentine et al. typically have lower capital costs, lower recurring costs, and lower tariffs than traditional circuit-switched networks. (See column 1 lines 37-38)
- 6) Claim **16** is rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted -- Prior Art--.
- Regarding claim **16**, "wherein the originating and terminating gateway controllers control a call relay using a Bearer Independent Call Control (BICC)

protocol." Applicants --Prior Art-- teaches as illustrated in FIG. 2, BICC signaling is exchanged between gateway controller. Thus, at the time of the invention, it would have been obvious to someone of ordinary skill in the art given this reference BICC can be used to control a call relay. The motivation for use of BICC protocol enables the transition of today's networks from general public switching systems to next-generation server based networks. Utilizing the latest techniques in network design, built on a server, proxy and media gateway network architecture, supports all currently deployed services on circuit switched, ATM and IP, including third generation wireless.

- 7) Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted --Prior Art--.

Regarding claim 17, "wherein the origination and terminating gateway controllers use a Media Gateway Control Protocol (MGCP) to control resources of the originating and terminating wireless gateways and the tone gateway. " RFC 2705 teaches (MGCP) for controlling Telephony Gateways from external call control elements called media gateway controllers or call agents. A telephony gateway is a network element that provides conversion between the audio signals carried on telephone circuits and data packets carried over the Internet or over other packet networks. (See the Introduction paragraph 1 in RFC 2705) Thus, at the time of the invention, it would have been obvious to someone of ordinary skill in the art given this reference

MGCP protocol can be used to control resources of the gateways. The motivation for use of MGCP protocol is designed to interface a media gateway controller and media gateway. The protocol is text based and supports a centralized call model. The media gateway controller is called call agent in MGCP terminology and the media gateways can be either different types of VoIP gateways (residential, trunking, corporate, etc.), network access servers or even voice over ATM gateways.

Allowable Subject Matter

3. Claims **2 and 3** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim **2**, the prior art of record teaches the method of claim **1**. The prior art of record fails to teach "wherein the modified BICC protocol induces the generation of the tone by transmitting and receiving Application Transport Mechanism (APM) messages multiple times between the originating and terminating gateway controllers."

Regarding claim **3**, the prior art of record teaches the method of claim **1**. The prior art of record fails to teach, "wherein the MGCP protocol is used by the originating and terminating gateway controllers to control resources of the tone gateway."

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4. Claims **5-11**, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim **5**, the prior art of record teaches the method of claim **4**. The prior art of record fails to teach " further comprising connecting a voice call, via the core network connection, between the originating wireless gateway and the terminating wireless gateway."

Regarding claim **10** and **11**, these claims are further limiting to claim **5** and are thus objected over the prior art of record.

Regarding claim **6**, the prior art of record teaches the method of claim **4**. The prior art of record fails to teach "wherein connecting the terminal gateway controller to the core network comprises: requesting a call connection by transmitting an Initial Address Message (IAM) from the originating gateway controller to the terminating gateway controller; searching for the terminating wireless gateway, connected to a call receiver, by conducting paging request and response operations between the terminating gateway controller and the terminating wireless gateway; requesting and confirming a second resource assignment at the terminating wireless gateway, using bearer information of the originating wireless gateway included in the transmitted IAM; and requesting and confirming a radio channel assignment, for the call receiver, with the terminating wireless gateway."

Regarding claim 7, the prior art of record teaches the method of claim 4. The prior art of record fails to teach "wherein generating the tone comprises: requesting and confirming a second resource assignment at the tone gateway, using the terminating gateway controller, and transmitting a paging tone to the caller, in accordance with the request of the terminating gateway controller; confirming a status of a call receiver and notifying the originating gateway controller of the status, with the terminating gateway controller; and providing a ring back tone to the caller, in accordance with the request of the terminating gateway controller, using the tone gateway."

Regarding claim 8 and 9, these claims are further limiting to claim 7 and are thus objected over the prior art of record.

5. Claim 13 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 13, further limiting to claim 12, is allowable over applicants admitted --Prior Art-- as reported on Figure 2. Applicants --Prior Art-- as reported in Figure 2 teaches the method of message flow between originating wireless GW, terminating wireless GW. The related art of Figure 2 fails to teach the resource assignment at the tone gateway.

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A handwritten signature in black ink, appearing to be 'Dangston', with a long horizontal stroke extending to the right.

DANGSTON
PRIMARY EXAMINER